

# SOUTHWESTERN NEWS

Media Contact: Ann Harrell

214-648-3404

[ann.harrell@utsouthwestern.edu](mailto:ann.harrell@utsouthwestern.edu)

## UT SOUTHWESTERN SCIENTISTS BEGIN NEW PSYCHIATRIC RESEARCH IN WORLD'S SECOND MAGNETIC SEIZURE THERAPY LABORATORY

DALLAS – Dec. 16, 2002 – Researchers at UT Southwestern Medical Center at Dallas are using magnetic fields to treat diseases in the world's second laboratory dedicated to magnetic seizure therapy (MST) research.

The director of the new Neuro Stimulation Laboratory, Dr. Mustafa M. Husain, and co-investigator Dr. Larry Thornton, associate professors of psychiatry, hope this therapeutic tool at UT Southwestern will offer a better option for patients suffering from neuropsychiatric diseases, including major depression.

MST stimulates the brain by directing a diffused electrical current to targeted areas but without the direct electrical stimulation used in electroconvulsive therapy (ECT), or “shock therapy” said Dr. Eric Nestler, chairman of psychiatry. MST also doesn't seem to have the same side effects as ECT.

“Magnetic seizure therapy is a new type of transcranial magnetic stimulation somewhat akin to electroconvulsive therapy, but one we hope will prove much superior,” said Nestler. “The power of MST is that it is possible to induce highly focal seizures. As a result, the treatment should be safer than ECT. Also, it should be possible to determine what parts of the brain mediate seizure-induced improvements in depression.”

Researchers in UT Southwestern's new lab are targeting specific brain areas for investigation, including “brain mapping,” a technique that searches the organ's neural circuitry in different neuropsychiatric disorders.

“We hope that MST will prove an effective treatment for major depression, bipolar disorder, Parkinson's disease and other psychiatric and neurological disorders,” said Husain.

MST works by passing electricity through a wire coil, generating an electromagnetic field to be directed at specific brain areas, he said, allowing for brain tissue stimulation without using electrical current. ECT, on the other hand, uses direct electrical stimulation of the brain tissue,

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which can lead to such side effects as confusion and memory loss.

In MST, Husain explained, the electrical coils are contained in a protective paddle-like device. Placed either against the side of or atop the head, the coils are attached to power boosters to control stimulation as well as to computers that run the research program and acquire data.

When the magnetic fields reach their target, they cause changes in brain circuitry, producing stimulation in the targeted area. The electromagnetic fields, Husain said, can also be manipulated, much like magnetic resonance imaging, to travel in a series of pulses, which makes them more malleable in targeting.

Thornton will conduct treatment studies at Zale Lipshy University Hospital with MST patients who suffer from treatment-resistant major depression.

Patient research will be done in conjunction with a team at Columbia University, the site of the first magnetic brain stimulation laboratory, which opened earlier this year.

Other UT Southwestern researchers participating in the project are Dr. Munro Cullum, acting chief of psychology; Shawn McClintock, research assistant in psychiatry; Judy Shaw, psychiatry associate; Monica Mendez, research assistant in psychiatry; and Michael Henson, research study coordinator in psychiatry.

For information about MST studies for treatment-resistant depression, call Henson at 214-648-8659.

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